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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/930,990 | 08/17/2001 | Wen-Shi Huang | 0941-1282PUS1 | 8682 |
| 2292 | 7590 | 06/14/2006 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | PATEL, NIHIR B | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3743 | |

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/930,990 | HUANG ET AL. | |
| | Examiner | Art Unit | |
| | Nihir Patel | 3743 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03.31.2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 8-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims **8, 11-13, 16-18 and 21-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US 6,244,331) in view of Hsieh (US 5,377,745).

4. **As to claim 8**, Budelman discloses a heat sink with integrated blower for improved heat transfer that comprises a centrifugal fan (see **column 3 lines 35-45**) including a rotary shaft **532** (see **column 3 lines 65-67**) and a plurality of blades **526** (see **figure 5A and column 3 lines 45-55**); and a heat sink **410** (see **figure 4**), including a plurality of first cooling fins **430** (see **figure 4**) and a second plurality of cooling fins **428** (see **figure 4**), wherein an annular cavity **416** (see **figure 4**) is defined between the first cooling fins and the second cooling fins; wherein the blades are located in the cavity (see **figure 5A**); and there is a distance between the rotary shaft and the second cooling fins (see **figure 5A**) but fails to disclose a second cooling fins having a lower

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portion wherein the entire rotary shaft is located above the lower portion of the second cooling fins and the rotary shaft is positioned away from the lower portion of the second cooling fins.

Hsieh discloses a cooling device for central processing unit that does provide a second cooling fins having a lower portion (**see figure 3 on the next page**) wherein the entire shaft is located above the lower portion of the second cooling fins and the rotary shaft is positioned away from the lower portion of the second cooling fins (**see figure 3 on the next page**). Therefore it would have been obvious to modify Budelman's invention by providing a second cooling fins having a lower portion wherein the entire rotary shaft is located above the lower portion of the second cooling fins and the rotary shaft is positioned away from the lower portion of the second cooling fins as taught by Hsieh in order to mount the fan means above the second fins.

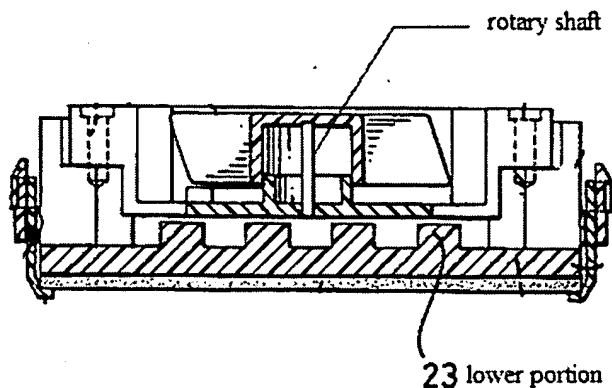


FIG. 3

5. As to **claims 11, 16 and 21**, Budelman teaches a heat sink with integrated blower for improved heat transfer wherein the annular cavity **416** (see **figure 4**) matches the centrifugal fan.
6. As to **claims 12, 17 and 22**, Budelman teaches a heat sink with integrated blower for improved heat transfer wherein the cooling fins are distributed around a region extending from a central region of the centrifugal fan to a periphery of the centrifugal fan but fails to teach cooling fins being distributed under a region extending from a central region of the centrifugal fan to a periphery of the centrifugal fan. Hsieh discloses a cooling device for central processing unit that does provide cooling fins being distributed under a region extending from a central region of the

centrifugal fan to a periphery of the centrifugal fan (**see figure 3 on the previous page**).

Therefore it would have been obvious to modify Budelman's invention by providing cooling fins being distributed under a region extending from a central region of the centrifugal fan to a periphery of the centrifugal fan as taught by Hsieh in order to mount the fan means above the second fins.

7. **As to claims 13, 18 and 23**, Budelman teaches a heat sink with integrated blower for improved heat transfer wherein the heat sink is made of a material chosen from the group consisting of aluminum, aluminum alloy, copper, copper alloy and the combination thereof (**see column 4 lines 33-45**).

8. Claims **9, 10, 14, 15, 19, 20 through 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US 6,244,331) in view of Hsieh (US 5,377,745) as applied to claims **8 and 11-13** above, and further in view of Miyahara et al. (US 5,940,268).

9. **As to claims 9, 10, 14, 15, 19, 20 and 24**, Budelman discloses a heat sink with integrated blower for improved heat transfer that comprises a centrifugal fan (**see column 3 lines 35-45**) including a rotary shaft **532** (**see column 3 lines 65-67**) and a plurality of blades **526** (**see figure 5A and column 3 lines 45-55**); and a heat sink **410** (**see figure 4**), including a plurality of first cooling fins **430** (**see figure 4**) and a second plurality of cooling fins **428** (**see figure 4**), wherein an annular cavity **416** (**see figure 4**) is defined between the first cooling fins and the second cooling fins; wherein the blades are located in the cavity (**see figure 5A**); and there is a distance between the rotary shaft and the second cooling fins (**see figure 5A**) and Hsieh discloses a cooling device for central processing unit that does provide a second cooling fins having a lower portion (**see figure 3 on the next page**) wherein the entire shaft is located above the lower

portion of the second cooling fins and the rotary shaft is positioned away from the lower portion of the second cooling fins (see figure 3 on the next page) but Budelman and Hsieh fail to disclose a cover formed on the heat sink and the centrifugal fan wherein the cover serves as an air seal to keep airtight. Miyahara discloses a heat sink and electronic device that does provide a cover 8 formed on the heat sink and the centrifugal fan wherein the cover serves as an air seal to keep airtight (see column 3 lines 15-35). Therefore it would have been obvious to modify the inventions of Budelman and Hsieh by providing a cover formed on the heat sink and the centrifugal fan wherein the cover serves as an air seal to keep airtight in order to generate smooth airflow. it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). The intended use statements are not given any patentable weight in this instance for example “serves as an air seal to keep airtight”.

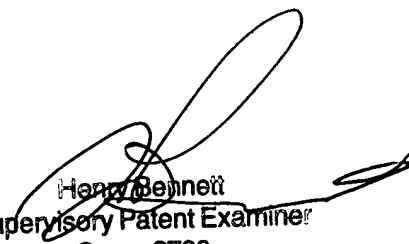
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nihir Patel whose telephone number is (571) 272-4803. The examiner can normally be reached on 7:30 to 4:30 every other Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on (571) 272-4791. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nihir Patel



Henry Bennett
Supervisory Patent Examiner
Group 3700